SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Computer Engineering **Academic Year: 2022** **Duration: 3 hours**
Date: 06.01.2023
Time: 10:30 am to 01:30 pm
Subject: Deep Learning (Semester VII) **Marks: 75**

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

(1) This question paper contains two pages.
(2) All Questions are Compulsory.
(3) All questions carry equal marks.
(4) Answer to each new question is to be started on a fresh page.
(5) Figures in the brackets on the right indicate full marks.
(6) Assume suitable data wherever required, but justify it.
(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	Enlist and explain various applications of deep learning. **OR** i. Difference between deep and shallow network. ii. What is deep learning?	[05] [03] [02]
Q1 (b)	Draw and explain the architecture of CNN.	[10]
Q2 (a)	i. Compare Keras, TensorFlow, and PyTorch ii. What is hyperparameter tuning? **OR** Explain LSTM with a suitable diagram.	[06] [04] [10]
Q2 (b)	What are contractive autoencoders?	[05]
Q3 (a)	Explain Back Propagation through Time algorithm. **OR** Elaborate on the applications of deep learning in Image Processing.	[05] [05]
Q3 (b)	Explain the problem of exploding and vanishing gradients in RNN with an example. How can this problem be tackled? **OR** List and explain various activation functions used in modeling of artificial neuron.	[10] [10]
Q4 (a)	Explain the concept of batch normalization with an example. **OR**	[08]

	i. Explain the applications of deep learning in the area of NLP. ii. Enlist various applications of RNN.	[04] [04]
Q4 (b)	What is a generative adversarial network? Explain its applications.	[07]
Q5 (a)	Write a short note on the following. **(Attempt any two)** i. VGG-19 ii. AlexNet iii. GRU	 [05] [05] [05]
Q5 (b)	Explain the architecture of ResNet.	[05]

All the Best